

Juggling Jerry Cans

Ditch the Diet, CARB is Back in Fashion

Filling up your fuel tank with a jerry jug may feel like a torturous workout rather than preparation for a great day out on the water. Balancing a 30-lb. fuel jug to fill your tank can be a grueling test of your upper-body strength. You almost need three hands to prevent fuel spilling, especially when gaskets leak or nozzles drip.

Boaters who want to ditch the workout need an easy-to-handle portable fuel container that doesn't spill or leak. Their wish may soon be granted. New regulations for "intermediary overland transportation refueling devices" (commonly called jerry jugs) aim to prevent spills and vaporous emissions that occur with common red fuel containers. These regulations are now in effect in the 13 states that have adopted the more stringent California standards. Nationwide adoption of California Air Resources Board (CARB) standards is targeted for 2009.



The tab on this nozzle has to catch on the edge of the deck fill to begin pouring, but after only four uses it's almost worn off.

But are these new designs effective in preventing leaks? Do they make filling your tank any easier? The BoatU.S. Foundation took a closer look at new jerry jugs and fueling products to find out how they work and what boaters need to consider when purchasing one of these devices.

Foundation staff performed tests evaluating self-venting and auto-stop features,

flow rate, and leak prevention. But first, we compared how well the new designs prevent emissions from evaporation of fuel through the sidewalls and nozzle of the tank.

We left two nearly full jugs of fuel (one CARB and one non-CARB) out in the elements to see how much would be lost to evaporation. After four months, the new CARB-compliant jug had no change, but the non-CARB jug lost weight — about one pound. The CARB design seems to have done its job in preventing vaporous emissions.

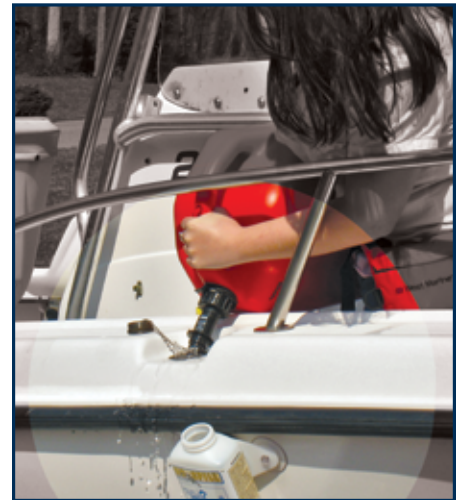
The Jerry Jugs

Foundation staff tested seven different designs of five-gallon jerry jugs — five CARB-compliant and two non-CARB. One of the non-CARB designs, our control unit, had a separate vent opening (unlike the CARB jugs) yielding a faster flow rate than its CARB counterparts (no surprise). The three rounds of testing in various environments were all conducted using only water, not fuel.

With no extra safety features, the non-CARB jug was by far the messiest, spilling ounces at a time rather than drops. Every tester experienced difficulty fitting the nozzle into the deck fill hole before fluid gushed all over the side of the boat. A funnel is a definite necessity with this traditional jerry jug.

The CARB jug poured much more slowly as they gulped and burped air through the venting nozzle instead of a separate vent hole. The slower speed forced testers to balance the weight of the jug on their knees until it emptied enough to hold comfortably. Some jugs had spring-loaded automatic shut-off features requiring that a tab on the nozzle be pressed against the side of the fill hole to activate the flow. If the nozzle slipped and pressure was released (which happened often) it would close the nozzle automatically. Testers often had to reset the nozzle to begin pouring again. This feature makes using a standard funnel impossible.

Though the spring-loaded tabs were designed to prevent leaks, they didn't always work well, splattering fluid when the tab slipped off the side of the deck fill. These tabs weren't very sturdy either, showing



Many of the jugs gurgled through their self-venting nozzles causing significant spills during filling.

significant wear after only two or three fills. After a dozen uses, it may break altogether. One tester commented that we'd probably have to jury-rig the jerry jug, circumventing the safety feature, to make it pour at all.

Most of the jugs featured graduated marks and extra capacity for adding oil. Additional child-safety features would certainly protect kids but some seemed to be adult-proof as well. One of the biggest complaints from our testers was the shape of the nozzle on many jugs that made it difficult to position it around the railing on our test boat. Though they may all look the same on the shelf, this design variation could be an important factor in selecting the best jug for your vessel.

Staff Pick — Testers unanimously agreed that jug #5 was the favorite. Its design made balancing on the gunwale easier and its unique auto-shut off was the most effective leak prevention.

The Pumps

We also tested a new type of jerry jug with an integrated pump. One came with a hand pump (#8 on the chart) and the other was gravity fed (#9). The hand pump delivered an accurate flow, but was extremely slow and dripped a little after pumping — not to mention the strain on our testers' arms after more than a hundred pumps. The six-



Jerry jug #5, the No Spill, fit our test boat perfectly and was the staff favorite for its ease of use and simple no-drip design.

gallon gravity pump (its larger capacity made it exempt from CARB standards) dripped after filling and would not flow unless it was going downhill, which wasn't always possible. Such complications make it difficult to recommend either device.

Gas Caddies

Three large-capacity containers called gas caddies were also tested. These devices have wheels to make transporting 14 to 29 gallons of fuel much easier — the largest weighed over 220 pounds when full. Two

of the caddies had hand pumps and one was gravity-fed. One of the pumps broke off mid-fueling, leaving us fishing for the components inside the caddy's tank. Without a pump, the caddies could only flow downhill resulting in much slower flow rates and making it impossible to fill our boat from the dock. Without a pump, the caddies could only flow downhill resulting in much slower flow rates and making it impossible to fill out our boat from the dock. The Tempo Gas Walker, #12, has an optional rotary pump that was not included in our tests because of its high cost. For more on the gas caddy tests go to BoatUS.com/Foundation/Findings.

Conclusions

In general, the slower flow of CARB jugs gives the user more time to react to a nearly full fuel tank. The new self-venting designs made the jugs gulp furiously, especially at first pour, causing some splatter-spills but nothing as dramatic as the non-CARB model. We were disappointed to see that nearly



Our non-CARB control jug was fast but very messy, spilling water tinted with red food coloring everywhere.

all devices spilled or dripped, despite our diligent efforts, so it's important to use an oil-absorbent pad when fueling.

"Carbs" are here to stay. And while they can't help you squeeze a few more pasta dinners into your diet, CARB standards have brought about a variety of innovative jerry jug designs. But don't take your purchase lightly. Be sure to pick a jerry jug that won't break your back. Consider the angle you'll be pouring from and look for multiple handles to ease the strain. With flow rates of two gallons per minute, you'll be holding the jug longer than it takes to microwave a spaghetti dinner. ■

— By Ted Sensenbrenner and Amanda Suttles

DEVICES TESTED	Price	*Total calculated Weight	Capacity (gallons)	Stated Flow Rate	** Average Flow Rate	Child Resistant Feature	Shut Off Feature	Did it Spill?
Jerry Jugs								
1. Wedco (Moulded Products) WCA 525P ▲	\$31.49	34.44	5	2	1.77	Y	Y	Y
2. Midwest (Can w/Duece Spill-Proof System) #5600 ▲	\$16.83	33.94	5	2	1.28	N	Y	Y
3. Scepter (Spill Proof CARB Can) #05096 ▲	\$22.99	34.00	5	2	1.83	Y	Y	Y
4. Blitz (Sure Pour) #31733 ▲	\$19.99	33.88	5	2	1.12	N	Y	Y
5. No-Spill (CARB Fuel Can) #50033 ▲	\$29.95	34.75	5	2.5	2.26	N	Y	N
6. Blitz (Pull 'n Pour spout)	\$13.99	33.31	5	N/S	2.12	Y	Y	Y
7. Wedco 5 (Vented Can w/Versaflex Spout) W 520	\$10.99	33.56	5	N/S	3.84	Y	N	Y
Pumps								
8. Petro Pump (No Spill Gas Can by InStep LLC)	\$29.99	34.63	5	N/S	N	N	N	N
9. Scepter Flo n' Go (Combo with Enviro Pump) ▲	\$34.99	41.81	6	2	1.66	Y	N	Y
Caddies								
10. Scepter Flo n' Go DuraMAX Gas Caddy ▲	\$169.99	105.81	14	2	0.67	N	N	N
11. Tracy Gas Kart ▲	\$199.99	109.94	15	N/S	0.98	N	N	N
12. Tempo Gas Walker ▲	\$379.99	221.25	29	3.5	1.88	N	Y	N

* Weight of fuel (6.25lbs/gal * # of gallons)+weight of empty jug

** Rate averaged from 4 tests performed under varying conditions.

▲ CARB Compliant ▲ CARB standards do not apply to jugs with a capacity over 5 gallons